



THE MONTANA
ANALYSIS AND REPORTING SYSTEM
MARS

Use of MARS Data to
Impact Instruction

Sponsored by the Office of Public Instruction







OBJECTIVES

You will be able to:

- Use the data available on MARS to help to plan for and impact instruction at the district, school, classroom, and students levels.







ANALYSIS AND REPORTING SYSTEM – BACKGROUND

Montana Analysis and Reporting System (MARS)
reports results for system and schools.


- Individual Students
- Class or Grade Level
- Student Groups
- School
- System
- State






MARS RESULTS

- Reading and Math
 - Grades 3-8 and 10
- Science
 - Grades 4, 8, and 10




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ANALYSIS AND REPORTING SYSTEM – BACKGROUND

- The Montana Criterion Referenced Test (CRT) compares student achievement to Montana content standards.
- Grades tested:
 - Reading and Math: 3-8 and 10
 - Science: 4, 8, and 10
- Types of items on test:
 - Multiple choice – Reading, Math, and Science
 - Short answer – only Math
 - Constructed response – Reading, Math, and Science
- The CRT consists of scored items and embedded field test items.
- The CRT is intended to
 - Assist educators in planning improvements in curriculum and instruction
 - Monitor the progress of schools in meeting state and federal standards.




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ANALYSIS AND REPORTING SYSTEM – ASSESSMENT TECHNIQUES & TOOLS

- Look for trends, patterns, or clusters in the data.
- Analyze results from multiple choice and constructed response (CR) items separately.
- Base decisions on more than one data point.
- Look at results for insights into:
 - Curriculum
 - Instruction
 - Student Achievement
- Share the results appropriately
 - Teachers
 - Parents
 - Students




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ANALYSIS AND REPORTING SYSTEM –
CRT DATA ANALYSIS

- Analyze
 - Test questions and answer choices
 - Correct answers and incorrect answers
 - The process used by students to arrive at an incorrect response
 - Proficient student responses and below proficient student responses
 - Questions and answers related to each Montana standard
 - Percentage of correct responses for each standard for multiple choice and constructed response
 - Student group statistics
 - School and/or system performance and the state results




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TRANSITION TO THE MONTANA COMMON
CORE STANDARDS (MCCS) –
SBAC* ASSESSMENT

- 2011-12 through 2013-14 the MontCAS will:
 - Use the current standards and reporting system
 - Progressively align content with the Montana Common Core Standards
 - Implement test questions to align with the Montana Common Core Standards
 - Provide released field test items aligned to Montana Common Core Standards
- Sample Items can be found on the SBAC website at the following link:
 - [SBAC Assessment Sample Items](#)



* Smarter Balanced Assessment Consortium


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ANALYSIS AND REPORTING SYSTEM –
CRT DATA ANALYSIS

Multiple Choice Questions

- What Standard is being assessed?
- What do students need to know to answer the question?
- What strategies would they use to get the correct answer?
- What misconceptions or incorrect processes might lead to each incorrect response?
- What are the implications for instruction?




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ANALYSIS AND REPORTING SYSTEM –
CRT DATA ANALYSIS

Constructed Response Questions

- What do students need to know to answer the question?
- What are the main requirements for a scale 4 answer?
- What would be needed to convert a scale 3 response to a scale 4 response?
- What are the implications for instruction?




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ANALYSIS AND REPORTING SYSTEM –
RELEASED ITEMS

Scored items are released annually

- A percentage of test items are released annually.
- There is a Released Items tab within *MARS* that can be used to access the current year's released items.
- You can view multiple years of released items for each grade and subject on the OPI website at:
http://opi.mt.gov/Curriculum/MontCAS/index.html?gpm=1_5&tpm=s5_2&tpm=s4_3
- Click on the year you would like to view for:
 - Multiple choice, constructed response, and math short answer items
 - Math vocabulary, answer keys
 - Scoring rubrics, and examples of student work for constructed response items
- 2012 is the first year that items coded to the MCCS have been made available.




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ANALYSIS AND REPORTING SYSTEM –
CRT DATA ANALYSIS

Released Items (Cont.)

On the released items table of contents –please look at: CRT Math Vocabulary Lists for grades 3-8 & 10. The math vocabulary used on the test is listed in this file – you may want to make sure that these terms are included in math instruction.



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NAVIGATING AND USING *MARS*

The next series of slides shows how to find and use different features of *MARS*.



ANALYSIS AND REPORTING SYSTEM – ACCESSING MARS

- Access the Analysis and Reporting System via the Measured Progress iServices website:
<http://iservices.measuredprogress.org>
- Select 'Montana' from the state/contract dropdown menu and select Enter.





ANALYSIS AND REPORTING SYSTEM – ACCESSING MARS

Click on MARS to launch the login screen.






ANALYSIS AND REPORTING SYSTEM – ACCESSING MARS

Enter your User Name and Password (classroom account) then click on "Log In".




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ANALYSIS AND REPORTING SYSTEM – HOME PAGE

After login, the Home page appears:



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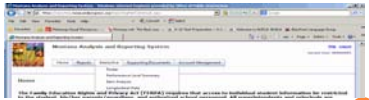
Links: Home, Reports, Interactive, Released Items, Help, Logout, View User Manual, OPI Web Site.




ANALYSIS AND REPORTING SYSTEM – INTERACTIVE

The Interactive Menu

- Roster
- Performance Level Summary
- Item Analysis
- Longitudinal Data



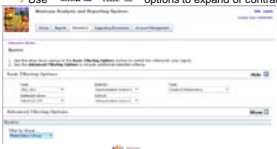
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ANALYSIS AND REPORTING SYSTEM – INTERACTIVE

Roster

- Choose values for: Year, System, Test (Grade and Subject), Administration, and School where needed.
- Select the Group to Filter By (usually School-level): Data will automatically display.
- Advanced Filtering Options can be selected to further refine data.
- Use **Show** **Hide** options to expand or contract the menu.




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ANALYSIS AND REPORTING SYSTEM – INTERACTIVE

Roster

- Items within the Roster can be sorted within the table without having to refresh the window.
- Sort by: Released Item, Standard (content), Points Possible, Last Name, First Name, Student ID, Scaled Score, or Performance Level.






ANALYSIS AND REPORTING SYSTEM – INTERACTIVE

Roster

- On the far right side of the spreadsheet are columns for each content standard and how many points each student earned. Cumulative points in that standard for the entire test (not just released items).
- The TPE column is Total Points Earned.

	C6.2	C6.3	C6.4	C6.5	C6.6	C6.7	TP	SS	PL		
20	7	7	9	8	8	59	3000	A		257	P
19	8	9	8	7	7	58	3000	A		257	P
18	8	9	8	7	7	57	3000	A		255	P
18	6	4	8	8	7	51	292	A		252	P
10	6	7	9	8	8	56	3000	A		252	P
18	6	8	9	5	7	53	298	A		249	NP
18	4	8	8	6	7	51	292	A		246	NP
18	8	9	10	8	8	61	3000	A		240	NP
17	7	9	7	7	6	53	298	A		237	NP
17	8	6	8	7	8	54	3000	A			

[illegible][illegible]



ANALYSIS AND REPORTING SYSTEM – INTERACTIVE

Item Analysis

- From the Interactive dropdown, select Item Analysis
- Enter values in Basic Filtering Options. Choose a Filter by Group. Data will automatically refresh and display as values are changed.
- Advanced Filtering Options can be selected to further refine data.
- Multiple Choice and Constructed Response results are displayed separately. For Multiple Choice, Count and Percent values can be selected.

Item Analysis Data

Filter by Group: [All]

Group Filter: [All]


View: [Table]

Multiple Choice

Item	Released Item	Standard	Correct	A	B	C	D	IR	Correct Response
Q1	1	2	45	10	10	10	10	10	C
Q2	2	2	45	10	10	10	10	10	C
Q3	3	2	45	10	10	10	10	10	C
Q4	4	2	45	10	10	10	10	10	C
Q5	5	2	45	10	10	10	10	10	C
Q6	6	2	45	10	10	10	10	10	C
Q7	7	2	45	10	10	10	10	10	C
Q8	8	2	45	10	10	10	10	10	C
Q9	9	2	45	10	10	10	10	10	C
Q10	10	2	45	10	10	10	10	10	C

Constructive Response

Item	Released Item	Standard	Correct	Percent
Q1	1	2	45	100
Q2	2	2	45	100
Q3	3	2	45	100
Q4	4	2	45	100
Q5	5	2	45	100
Q6	6	2	45	100
Q7	7	2	45	100
Q8	8	2	45	100
Q9	9	2	45	100
Q10	10	2	45	100



Analysis and Reporting System – Interactive

Item Analysis

- Items within the Item Analysis can be sorted within the table without having to refresh the window.
- Sort by: Released Item, Standard, Correct (#), A(#), B(#), C(#), D(#), IR, or Correct Response. It will sort smallest to greatest.

Item Analysis Data

Filter by Group: [All]

Group Filter: [All]


View: [Table]

Multiple Choice

Item	Released Item	Standard	Correct	A	B	C	D	IR	Correct Response
Q1	1	2	45	10	10	10	10	10	C
Q2	2	2	45	10	10	10	10	10	C
Q3	3	2	45	10	10	10	10	10	C
Q4	4	2	45	10	10	10	10	10	C
Q5	5	2	45	10	10	10	10	10	C
Q6	6	2	45	10	10	10	10	10	C
Q7	7	2	45	10	10	10	10	10	C
Q8	8	2	45	10	10	10	10	10	C
Q9	9	2	45	10	10	10	10	10	C
Q10	10	2	45	10	10	10	10	10	C


Constructed Response

Item	Released Item	Standard	Correct	Percent
Q1	1	2	45	100
Q2	2	2	45	100
Q3	3	2	45	100
Q4	4	2	45	100
Q5	5	2	45	100
Q6	6	2	45	100
Q7	7	2	45	100
Q8	8	2	45	100
Q9	9	2	45	100
Q10	10	2	45	100



ITEM ANALYSIS (CONTINUED)

View	Released Item	Standard	Correct	A	B	C	D	IR	Correct Response
Q1	27	2	13	12	13	13	21	0	C
Q2	28	5	21	9	9	21	29	0	C
Q3	9	7	19	9	9	19	29	0	C
Q4	20	5	22	9	20	20	10	0	B
Q5	18	7	36	10	4	36	17	0	C
Q6	10	5	36	9	9	36	14	0	C
Q7	1	2	40	3	40	10	10	0	B
Q8	17	4	41	3	41	6	16	0	B
Q9	11	6	41	10	10	4	41	0	B
Q10	13	7	42	3	10	42	12	0	C
Q11	14	6	43	7	43	11	3	0	B
Q12	5	7	40	9	7	13	40	0	B
Q13	4	5	30	7	12	4	2	1	B
Q14	7	6	20	2	20	20	1	1	C
Q15	12	7	10	7	9	7	10	0	D
Q16	2	3	36	36	3	2	1	1	A
Q17	10	4	38	3	18	3	0	0	B



ANALYSIS AND REPORTING SYSTEM – INTERACTIVE

Longitudinal Data


- From the Interactive dropdown, select Longitudinal Data.
- Enter values in Basic Filtering Options and select a grade.
- Select a student from the list.
- All subject results display with up to four years worth of data.


Longitudinal Data

Filter by Grade:
Grade 05

Export in PDF format

Student Number	Year	Enrolled Grade	School	Administrative	Test Name	Content Area	Score	Performance Level
0700	05	05	Johnston	Johnston	Grade 05 Mathematics	mat	252	Meeting Expectations
0700	05	05	Johnston	Johnston	Grade 05 Reading	rea	250	Proficient
0800	04	04	Johnston	Johnston	Grade 04 Mathematics	mat	267	Proficient
0800	04	04	Johnston	Johnston	Grade 04 Reading	rea	275	Proficient
0900	04	04	Johnston	Johnston	Grade 04 Science	scl	258	Proficient
0900	04	04	Johnston	Johnston	Grade 04 Mathematics	mat	260	Advanced
0900	04	04	Johnston	Johnston	Grade 04 Reading	rea	267	Advanced





ANALYSIS AND REPORTING SYSTEM – REPORTS

Reports

- From the main menu at the top of the screen, select Reports

Reports

Home

Reports

Interactive

Advanced Search

1. Use the drop-down menu in the Basic Filtering Options section to select the criteria for your report.

2. Use the dropdown to select the reports that you wish to download from the Reports section.

3. Many reports downloaded from this site are compressed (.zip) and saved in portable document format (.pdf). You will need a decompression utility and Active Desktop Reader to open reports.

4. When saving files, please be sure to save them to a secure location on your network.


Select Basic Filtering Options.


Basic Filtering Options

Year:
2000-2003
Advanced Filter

School:
Public Schools
Advanced Filter

Grade:
Please Select





ANALYSIS AND REPORTING SYSTEM – REPORTS

Once Basic Filtering Options have been selected:

- Select Reports you would like to download.
- Select Download.
- Save report(s) to computer. As with other reports, it will be compressed.

Reports

Report Name


School Summary - Mathematics

School Summary - Reading

School Summary - Science

Download

NOTE: The number of students on your summary reports may not match the number of students on your roster. Students who were not enrolled the entire year are not included on your summary reports, but are included on the roster.





Extremely Important!

The information on MARS is confidential and must be protected from viewing by unauthorized individuals.

- Never leave your browser open to MARS when you are not directly working with the program.
- Always completely close your browser and clear the history when you are done on your school computer or especially on any other computer.
- Also, please remember if you export data or copy & paste data from MARS treat it with confidentiality.



CRT PERFORMANCE LEVEL DESCRIPTORS AND SCALED SCORE RANGES (SAMPLES)

Grade 3

Performance Level	Reading	Mathematics
Advanced	357-360	350-353
Proficient	291-296	279-287
Needing Proficiency	225-249	223-240
Not on	300-324	300-324

Grade 5

Performance Level	Reading	Mathematics
Advanced	283-300	280-301
Proficient	260-286	259-288
Needing Proficiency	221-249	221-241
Not on	280-224	280-224

Grade 7

Performance Level	Reading	Mathematics
Advanced	318-330	300-330
Proficient	261-297	270-280
Needing Proficiency	221-240	221-240
Not on	260-224	260-224

Grade 8B

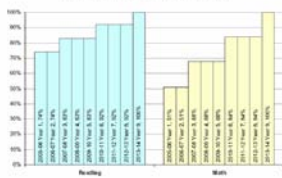
Performance Level	Reading	Mathematics	Science
Advanced	289-300	281-300	260-300
Proficient	250-288	250-280	250-280
Needing Proficiency	221-249	221-240	221-240
Not on	260-224	260-224	260-224

http://www.opi.mt.gov/curriculum/MontCAS/#qpm1_10



CURRENT TIMELINE FOR IMPROVEMENT

Montana Annual Measurable Objective Trajectory





MONTANA COMMON CORE STANDARDS AND MONTANA CONTENT STANDARDS

Links to both the MCCS and Montana Content Standards can be found at on the MARS tab at the following link:

http://opi.mt.gov/Curriculum/MontCAS/index.html?gm=1_5&tpm=5_4&tpm=8_2



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MARS HELP

- 2008 MARS User and Training Guide:
http://opi.mt.gov/Curriculum/MontCAS/index.html?gm=1_5&tpm=5_4&tpm=8_2
- Technical Support is available at the following:
 - E-Mail: MarsHelp@measuredprogress.org
 - Phone: (866) 632-7764



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OPI CONTACT INFORMATION

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